CLAIMS

1.   A moving object detecting and measuring apparatus formed by using a computer, including:

        a first moving object detecting means having a first detecting area defined in the shape of a slit on an input image;

        one or more second moving object detecting means having a second detecting area defined in the shape of a slit on the same straight line as the first detecting area, said second detecting area being different in length from said first detecting area; and

        moving object measuring means for deciding a length of said moving object passing through said slit in a longitudinal direction of said slit according to output of said first and second moving object detecting means.

2.   A moving object detecting and measuring apparatus according to Claim 1, wherein said second detecting area includes one or more detecting areas defined by partitioning said first detecting area.

3.   A moving object detecting and measuring apparatus according to Claim 1, wherein said second detecting area includes one or more detecting areas defined so as to extend from one end of said first detecting area and be shorter in length than said first detecting area.

4.   A moving object detecting and measuring apparatus according to Claim 3, wherein said second

detecting area includes one or more detecting areas extending from one upper end of said first detecting area, said one or more detecting areas being defined so as to be shorter than said first detecting area and be various in length.

5.   A moving object detecting and measuring apparatus according to Claim 1, wherein coordinates, on said image, of a start point and an end point of said first and second detecting areas can be set by an input device.

6.   A moving object detecting and measuring apparatus according to Claim 1, further comprising:

means for generating measurement codes for all moving object detecting means according to respective valves of said moving object detecting means by taking a first value when a moving object enters said first and second detecting areas and a second value when the moving object does not enter said first and second detecting areas.

7.   A moving object detecting and measuring apparatus according to Claim 6, comprising:

memory means for storing image structure variations of said first and second detecting areas, said memory means being provided so as to correspond to said first and second detecting areas; and

in said moving object measuring means, means for measuring a length, in a longitudinal direction of said slit, of the moving object by comparing said

measurement codes, a preset code and information about length, in a longitudinal direction of said slit, of the moving object corresponding to said codes, when said image structure variation of said first detecting area is maximum.

8.   A moving object detecting and measuring apparatus according to Claim 7, further comprising:

        output means for outputting a warning or guidance based on measurement results of said moving object measuring means.

9.   A moving object detecting and measuring apparatus using a computer, comprising:

        means for inputting an video image and other pictorial images from outside;

        moving object detecting means for defining an object under detection along a single straight line consisting of a base line and partitions thereof on an input video image or pictorial image and setting at least one area of interest to make a decision as to presence or absence of a moving object in an input video image or a pictorial image;

        means for calculating correlation in image structure between data on said area of interest in a specific frame and image and data on said area of interest in each frame and image;

        detection means for deciding moving object detection events, such as presence or absence of a moving object or a change of the background image, from

a pattern of correlation values of a plurality of calculated image structures; and

means for coding a moving object detection result output from said detection means and deciding whether a moving object has been detected or not.

10. A method for detecting and measuring a moving object by using a computer, comprising the steps of:

defining a first detection area in a shape of slit on an input image;

defining a second detection area in a shape of a slit which is different in length from said first detection area on a same straight line as said first detection area; and

deciding a length, in a longitudinal direction of said slit, of a moving object passing through said slit according to output of said first and second detection areas.

11. A moving object detecting and measuring method according to Claim 10, further comprising the steps of:

storing a first value when said moving object has entered said first and second detection areas and storing a second value when said moving object has not entered said first and second detection areas; and

generating a measurement code according to respective values stored.

12. A moving object detecting and measuring method according to Claim 11, further comprising the

steps of:

when an image structure variation in said first detection area is maximum, comparing said measurement code, a preset code and information about a length, in a longitudinal direction of a slit, of the moving object corresponding to said codes; and

measuring a length, in a longitudinal direction of said slit, of said moving object.

13.   A program for executing detecting and measuring a moving object by a computer, comprising the steps of:

defining a first detection area in a shape of a slit on an input image;

defining a second detection area in a shape of a slit located on a same straight line as said first detection area, said second detection having a length different from said first detection area; and

deciding a length, in a longitudinal direction of said slit, of a moving object passing through said slit according to output of said first and second detection areas.